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ABSTRACT

A study focused on the development and preliminary validation of a framework for effective vocational education programs serving students with special needs. An initial framework composed of 20 program components was posited from an analysis of recent, rigorous studies of vocational education programs serving disabled, disadvantaged, and limited English proficiency students. Information for three concurrent content validity analyses was drawn from state-sponsored studies of exemplary programs, professional texts, and federal legislation. Content analysis matrices were developed for each information source. For each of the documents or studies, a data matrix illustrated the extent to which each component was verified. Multiple readers with expertise in vocational education for special needs students reviewed and verified the data presented in the matrices. Each component drew support from at least half of the validity sources. Eight components were verified by more than half as essential: sufficient financial support, individualized curriculum modifications, ongoing career guidance and counseling, instructional support services, assessment of individual career interests and abilities, family/parental involvement and support, intra- and interagency collaboration, and follow-up. They emerged as the core structure for the programs and services that serve special population students effectively. (Appendixes include 41 references, an 11-item bibliography, and a descriptive list of 20 components.) (YLB)

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EFFECTIVE VOCATIONAL EDUCATION FOR STUDENTS WITH SPECIAL NEEDS: A FRAMEWORK

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TABLE OF CONTENTS

Introduction 1
Purpose 2
Procedures 3
Findings 6
- Initial Analysis of Effectiveness Studies 6
- State-Initiated Studies 9
- Current and Recent Federal Legislation 11
- Professional Textbooks 13

Summary, Conclusions, and Discussion 15
- Conclusions 15
- Discussion 17

References 19
Bibliography 23
Appendix: Components of Effective Vocational Education Programs Serving Special Populations 25

INTRODUCTION

Since 1963, federal vocational education legislation has authorized funding of programs and support services designed to enhance the participation of special population students in secondary and postsecondary vocational education programs. While numerous programming approaches have been attempted, few have been successfully evaluated or carefully examined. Most of the studies of effective vocational education programs which serve special population students have focused on one group of students (i.e., the disabled or the economically disadvantaged). Further, the studies have often been descriptive in nature and have seldom focused on the relationships between program components and the student outcomes achieved by program completers. Thus, much of what is known about effective programs and services has emerged from extensive local development and innovation.

Historically, local administrators have relied primarily on the minimal requirements of state and federal legislation as a means for designing programs and services for special needs students. In response to the lack of widespread, effective programs at the local level, Congress has been writing prescriptive legislation requiring schools to provide both greater access and increasingly comprehensive services. Extensive professional debate has focused on whether or not such top-down approaches to educational reform are seldom successful in bringing about improved programs for youth with special needs. Studies of the impact of the Carl D. Perkins Vocational Education Act of 1984 (Wirt, Muraskin, Goodwin, & Meyer, 1989) called for the elimination of the set-aside approach to funding programs for each target group. More specifically, the most recent National Assessment of Vocational Education (NAVE) recommended that local improvement grants and program demonstration grants be provided from basic state grants to communities with higher concentrations of disadvantaged students. Such grants would "expand the base of knowledge about effective practices in vocational education" (p. xvi).

In addition to federal and state legislative mandates, the field of vocational special needs education has begun to develop a discrete knowledge base which is shared by the rapidly growing group of professionals who work in the field. This knowledge is represented in several relatively new journals (some of which are now ten years old), numerous professional texts, and a rapidly growing literature within and across the fields of vocational education, special education, rehabilitation, remedial and developmental

education, bilingual education, and educational equity. Written primarily by individuals with backgrounds in special education, these texts offer useful ideas on how to modify or develop vocational education programs which are more responsive to students with disabilities and other types of learning and behavioral problems.

As one examines the rapid development of programs and support services in vocational education over the past two decades, it is apparent that much of the knowledge base has emerged from legislative mandates and local practice. If the quality of programs and services are to improve and become pervasive in the United States, a framework for defining and studying these programs is a foundational necessity.

PURPOSE

The purpose of this study was to develop a preliminary framework that could be used to improve policy and practice as well as to focus future research and development. This framework will be of value to state departments of education as they conduct effective program searches, to policymakers interested in programmatic issues associated with effective vocational education programs, and to researchers interested in studying the effectiveness of various vocational curriculum and instructional strategies used with special populations.

In addition, this framework provided the structure used by the National Center for Research in Vocational Education (NCRVE) in the development of the National Recognition Program for effective vocational education programs serving students with special needs. Beginning in 1990, the Technical Assistance for Special Populations Program (TASPP) at the University of Illinois–NCRVE site established this major initiative to

1. select and describe programs and their salient components from throughout the United States which can be featured as "models" for administrators and practitioners to replicate;

2. to develop technical assistance resources on selected effective programs and practices;

3. to strengthen inservice and preservice teacher education preparation with new knowledge; and

4. to provide a framework to guide further research.

PROCEDURES

The initial steps toward constructing a framework for examining effective programs were undertaken in conjunction with an earlier NCRVE study which sought to identify appropriate federal policy options for special populations in vocational education (Phelps, Wermuth, & Crain, 1991). In preparing this original study, the authors analyzed a series of formal research and evaluation studies which offered recommendations regarding the components of successful programs. The twenty components identified in the cross-study analysis served as an initial framework for analyzing information from other sources (see Table 1). The basic study procedures involved compiling a series of matrices indicating components which were concurrently cited as valid indicators of effective programs.

Table 1
Components of Exemplary Vocational Education Programs Serving Special Populations

Program Administration

- Administrative Leadership and Support
- Sufficient Financial Support
- Formative Program Evaluation
- Summative Program Evaluation
- Staff Development

Curriculum and Instruction

- Individualized Curriculum Modifications
- Integration of Vocational and Academic Curricula
- Appropriate Instructional Settings
- Cooperative Learning Experiences

Table 1 (cont.)

Comprehensive Support Services

- Ongoing Career Guidance and Counseling
- Instructional Support Services (e.g., aides and resources)
- Assessment of Individual Career Interests and Abilities

Formalized Articulation and Communication

- Family/Parental Involvement and Support
- Early Notification of Vocational Opportunities (both students and parents)
- Vocational and Regular Educators' Involvement in Individualized Planning
- Formalized Transition Planning
- Intra- and Interagency Collaboration

Occupational Experience, Placement, and Follow-Up

- Work Experience Opportunities
- Job Placement Services
- Follow-Up (graduates and nongraduates)

Based on discussions with the TASPP National Advisory Committee, it was argued that the general validity of the framework needed to be further examined. Three additional information sources were recommended as potential indicators of concurrent validity for the framework. The pertinent information sources that were examined included reports from state departments of education and the state boards of vocational education which describe effective vocational education programs, analyses of recent and current federal legislation pertaining to special populations, and analyses of several recent professional textbooks on vocational special needs education.

For each of these information sources, pertinent documents were collected, reviewed, and analyzed. Each of the documents was read closely by one of the researchers and a preliminary indication was made noting which of the components were recommended within the document as an effective program component. Through this interactive process, operational definitions for each of the identified components were refined and broadened as appropriate to ensure their applicability to various special needs populations and multiple program environments (i.e., area vocational schools, community colleges, and community-

based programs). Subsequently, three other TASPP staff members reviewed each document in order to establish multiple-rater reliability for the data matrices. Discussions among TASPP staff members at biweekly meetings over three months produced data matrix ratings for each study in all four matrices.

Content validity for the components in the framework was established concurrently during the study through communication among the researchers regarding appropriate, common definitions for each of the components. The definitions and descriptions of each of the components are found in the appendix.

As noted above, several current research studies describing effective vocational education programs for students with special needs were collected and analyzed by the authors in 1988-1989 while they were researching federal policy options for the vocational education of youth and adults with special needs. Discussions and additional conversations with researchers in the field expanded the number of studies analyzed to eight from the original five studies used as the basis for the framework in 1990. Each of these studies offers empirical results based on rigorous research and evaluation methodology. In most of these studies, the programs were selected for inclusion based on strong evidence of student outcomes. Figure 1 presents the basic framework and data matrix with which the study was undertaken.

A primary information source for assessing the concurrent validity of the initial framework was local- and state-level studies of vocational education programs serving special populations. State departments of vocational education are often mandated to conduct and disseminate information regarding exemplary practices and programs serving special needs students. The researchers contacted each state administrator of vocational special needs education and special education, asking for any information developed by their state agency concerning criteria used to identify effective or exemplary vocational education programs serving special needs students, as well as copies of any recent, resultant studies. Twenty-five states returned relevant information, including criteria and recent reports on studies of effective or exemplary programs. These studies and reports were reviewed and screened by the research team. The criteria and processes used by state departments to identify, select, and describe effective programs and/or practices were of particular interest. From the documents received, eight studies had used clearly defined

criteria and components for effective programs. These studies were content analyzed against the components listed within the preliminary framework.

Federal legislation has also had a major influence on the design and delivery of programs and instruction. Recent federal legislative provisions and mandates pertaining to special populations were analyzed, again comparing specific legislative provisions with the salient elements of the preliminary framework. The eight pieces of federal legislation which were content analyzed are all written specifically for individuals considered to be members of special populations. However, only two of these, the Carl D. Perkins Vocational Education Act of 1984 and the 1990 Amendments, pertain directly to vocational education.

Finally, recently published textbooks on vocational or career education for students with special needs were also identified and collected. Given the rigid development of special programs and services for students with special needs, no less than nine professional texts have been written or revised in the past decade. The content of these texts were analyzed by omparing and contrasting the chapter and section headings with the components identified within the emergent preliminary framework.

FINDINGS

Initial Analysis of Effectiveness Studies

As noted earlier, several recent studies were identified and analyzed which described effective vocational education programs serving diverse special populations. This analysis expanded an earlier analysis conducted by the authors (Phelps et al., 1991). The effectiveness studies included recent research reports and large-scale evaluations. More specifically, the documents included in the analysis examined programs serving students with handicaps (Eagle, Choy, Hoachlander, Stoddard, & Tuma, 1987; Gugerty, Tindall, Heffron, & Dougherty, 1988; Hoachlander, & Stoddard, 1987), limited English proficient (LEP) students (Friedenberg, Gordon, Bradley, & Dillman, 1988; Friedenberg, Gordon, & Dillman, 1988a, 1988b; Friedenberg, Kulick, Gordon, & Dillman, 1988; Hardy, 1989), and multiple types of special needs learners (Parks, McKinney, & Mahlman, 1987). Each of these studies used rigorous research methods (i.e., on-site

interviews, classroom observations, and analysis of student outcomes) to examine the quality and effectiveness of vocational education programs for various target groups of students with special needs. Additionally, a report from NAVE (Hayward & Wirt, 1989) was examined. This report used longitudinal student and school-based data from the 1980 High School and Beyond Study to examine certain variables related to the access of special needs students to quality vocational education. Finally, a recent report on vocational education participation from the National Longitudinal Transition Study of Special Education Students was examined (Wagner, 1991).

During the initial analysis of these reports, certain broad categories for classifying the components of effective vocational educational programs emerged, regardless of the specificity or diversity of the population of students being served. The following five categories of educational processes and practices were included in some form in each of the studies identified above:

1. Program Administration
2. Curriculum and Instruction
3. Comprehensive Support Services
4. Formalized Articulation and Communication
5. Occupational Experience, Placement, and Follow-Up

These categories served as "advanced organizers" for the components and provided a coherent structure for the conceptual framework. In each of the five categories, certain characteristics of effective vocational education programs serving various special needs populations were consistently identified as important to overall program effectiveness. These characteristics or components of effective vocational education programs serving special needs learners add considerable specificity and depth to the five categories and provide a comprehensive preliminary framework. This preliminary framework is presented in Figure 1.

Figure 1. Vocational Special Needs Research Studies

	Components \ Research Reports	Eagle et al., 1987	Friedenberg, Gordon, & Dillman, 1988a	Gugerty et al., 1988	Hardy, 1989	Hayward and Wirt, 1989	Hoschlander and Stoddard, 1987	Parks et al., 1987	Wagner, 1991
Program Administration	Administrative Leadership/Support	●	⊗	●	●	□	●	⊗	□
	Sufficient Financial Support	●	●	●	⊗	□	●	●	□
	Formative Program Evaluation	⊗	●	●	●	□	●	●	⊗
	Summative Program Evaluation	⊗	●	●	●	□	●	●	⊗
	Staff Development	⊗	●	⊗	⊗	□	⊗	⊗	●
Curriculum and Instruction	Individualized Curriculum Modifications	●	●	●	●	□	●	●	●
	Integration of Vocational and Academic Curricula	●	⊗	●	●	●	●	⊗	●
	Appropriate Instructional Settings	●	●	⊗	●	●	⊗	⊗	●
	Cooperative Learning Experiences	●	●	⊗	●	□	●	●	⊗
Comprehensive Support Services	Ongoing Career Guidance and Counseling	●	●	●	●	□	●	●	□
	Instructional Support Services	●	●	●	●	□	●	●	□
	Assessment of Individuals' Interests and Abilities	●	●	●	●	□	●	●	□
Formalized Articulation and Communication	Family/Parental Involvement and Support	●	⊗	●	●	□	⊗	⊗	□
	Early Notification of Vocational Opportunities	●	●	●	●	□	●	●	□
	Voc. & Regular Educators' Involvement in Planning	●	●	●	●	□	●	●	□
	Formalized Transition Planning	●	⊗	●	⊗	⊗	●	⊗	□
	Intra- and Interagency Collaboration	●	●	●	●	□	●	●	⊗
Occupational Experience, Placement, and Follow-Up	Work Experience Opportunities	●	⊗	●	●	●	●	⊗	●
	Job Placement Service	●	●	●	●	●	●	⊗	⊗
	Follow-Up	●	●	●	⊗	●	●	⊗	⊗

● Stated* ⊗ Implied** □ Component Not Examined***

Note: The Hayward and Wirt (1989) study used analysis of longitudinal data on 1980 sophomores from the High School and Beyond Data Set and the Wagner (1991) study used analysis of data from the National Longitudinal Transition Study. Data on many of the components were not acquired in these longitudinal data analysis studies.

Coding:

* ●	Stated	The findings explicitly identify the component.
** ⊗	Implied	The study findings recommended practices that inferred the component would be present or necessary (e.g., several studies recommended using cross-age tutoring or placing students in teams to solve problems). These practices infer that cooperative learning experiences are being employed, but do not identify them as such.
*** □	Component Not Examined	The design or limitations of the studies precluded examination of this component.

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Each of the components in Figure 1 are either implied or stated in the studies listed across the top of the matrix. (The appendix provides a detailed and comprehensive summary of each component.) The figure provides a detailed analysis of the components identified in the studies as those critical to the success of vocational education programs serving special needs learners. As noted in the legend, the design of certain studies precluded the examination of certain components. While this was primarily the case in the Wagner (1991) and Hayward and Wirt (1989) studies, the other studies provided either explicit or implied/inferred support for the program component as indicated in the matrix.

State-Initiated Studies

Figure 2 presents the findings of the eight studies we have selected relative to the preliminary framework. Inspection of Figure 2 suggests that there is reasonably strong support in these state studies and initiatives for many of the twenty components in the preliminary framework. In seven of the studies, there is explicit support for strong administrative leadership. Six studies verify the importance of summative evaluation mechanisms (e.g., quarterly reports on student progress), student follow-up, and intra- or interagency collaboration.

It is important to recognize that the state reports and studies reflect information from only five different states. This may explain why only limited support is provided for two components in the framework (i.e., vocational educator involvement in individualized planning and cooperative learning experiences). Overall, these studies clearly document the importance of the comprehensive support services, program administration, and occupational experience categories of the framework.

Figure 2. State Department Searches for Exemplary Vocational Education Programs

	Components \ State Vocational Education Studies	Georgia State Department of Education, 1988	Maryland State Dept. of Education, 1989	New Jersey State Agency for the Approval . . . , 1986	New Jersey State Dept. of Education, 1987	Project Transition, 1989 (Florida)	Roth et al., 1986 (New Jersey)	State Of Maine, 1987	Wisconsin Board of Voc., Tech., and Adult Ed., 1989
Program Administration	Administrative Leadership/Support	●	●	●	●	□	●	●	●
	Sufficient Financial Support	●	⊘	●	●	□	□	⊘	□
	Formative Planning Evaluation	□	●	●	●	□	□	●	●
	Summative Planning Evaluation	●	●	●	●	□	□	●	●
	Staff Development	□	●	□	⊘	□	□	⊘	●
Curriculum and Instruction	Individualized Curriculum Modifications	●	●	●	⊘	□	●	●	⊘
	Integration of Vocational and Academic Curricula	⊘	□	●	●	□	●	⊘	□
	Appropriate Instructional Settings	⊘	⊘	⊘	⊘	□	●	⊘	⊘
	Cooperative Learning Experiences	⊘	□	□	□	⊘	□	●	□
Comprehensive Support Services	Ongoing Career Guidance and Counseling	⊘	●	●	⊘	□	●	●	□
	Instructional Support Services	●	●	□	⊘	□	●	●	⊘
	Assessment of Individuals' Interests and Abilities	●	●	□	●	□	●	●	⊘
Formalized Articulation and Communication	Family/Parental Involvement and Support	●	⊘	□	●	⊘	●	●	□
	Early Notification of Vocational Opportunities	⊘	⊘	□	●	□	⊘	●	⊘
	Voc. & Regular Educators Involvement in Planning	□	□	□	□	⊘	●	⊘	□
	Formalized Transition Planning	⊘	●	□	□	●	⊘	●	□
	Intra- and Interagency Collaboration	●	●	⊘	●	●	⊘	●	●
Occupational Experience, Placement, and Follow-up	Work Experience Opportunities	⊘	●	□	●	●	□	●	●
	Job Placement Service	⊘	●	⊘	⊘	□	⊘	●	⊘
	Follow-Up	⊘	●	●	●	●	⊘	●	●

● Stated* ⊘ Implied** □ Component Not Examined***

Coding:

* ● Stated — The findings explicitly identify the component.

** ⊘ Implied — The study findings recommended practices that inferred the component would be present or necessary (e.g., several studies recommended using cross-age tutoring or placing students in teams to solve problems). These practices infer that cooperative learning experiences are being employed, but do not identify them as such.

*** □ Component Not Examined — The design or limitations of the studies precluded examination of this component

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Current and Recent Federal Legislation

As noted earlier, federal education and employment legislation has been heavily focused on equity concerns since the early 1960s. In addition to civil rights legislation, several federal programs provide additional services to youth and adults with special needs. Currently, eight major pieces of federal legislation have some direct influence on vocational education programs serving special needs students. While current federal legislation emanates from a political context, it also reflects some of the realities of the professional knowledge base (i.e., during Congressional hearings, professional educators, researchers, parents, employers, and others contribute in various ways to the shaping of proposed legislation).

In this analysis, three special education laws—two laws pertaining to compensatory education, the current employment and training act (Job Training Partnership Act [JTPA]), and the current and most recent vocational education acts—were reviewed. As Figure 3 indicates, there is a great deal of support within the legislation for the Comprehensive Support Services category, the assessment and support services component being the most strongly supported. Further, this analysis reveals that most of the federal legislation is predicated on the need for providing additional funding to assure that youth with disabilities or disadvantages have access to appropriate support services and individualized curriculum modifications. Also, the federal statutes have tended to emphasize the importance of interagency collaboration and coordination to the extent of earmarking funds for coordination and strongly suggesting that states develop interagency agreements. Parental and family involvement has been included more frequently in recent federal legislation as well.

Figure 3. Federal Legislative Provisions

	Components \ Federal Legislation	P.L. 94-142, 1975 (EHA)	P.L. 97-35, 1981 (ECIA, Chapter 1)	P.L. 97-300, 1982 (JTPA)	P.L. 98-199, 1983 (EHA Amendments)	P.L. 98-524, 1984 (Perkins of 1984)	P.L. 100-297, 1988 (Hawkins-Stafford)	P.L. 101-392, 1990 (Perkins of 1990)	P.L. 101-476, 1990 (IDEA)
Program Administration	Administrative Leadership/Support	□	●	□	□	⊗	⊗	□	□
	Sufficient Financial Support	●	⊗	●	●	⊗	●	●	●
	Formative Planning Evaluation	□	□	□	●	□	□	□	□
	Summative Planning Evaluation	□	●	●	●	⊗	⊗	□	□
	Staff Development	□	□	□	⊗	⊗	□	●	⊗
Curriculum and Instruction	Individualized Curriculum Modifications	●	●	⊗	●	●	●	●	●
	Integration of Vocational and Academic Curricula	□	□	⊗	□	⊗	□	●	□
	Appropriate Instructional Settings	⊗	□	□	⊗	●	□	●	●
	Cooperative Learning Experiences	□	□	□	□	□	□	⊗	□
Comprehensive Support Services	Ongoing Career Guidance and Counseling	⊗	●	□	⊗	●	□	●	□
	Instructional Support Services	●	⊗	●	●	●	●	⊗	●
	Assessment of Individuals' Interests and Abilities	●	⊗	●	●	●	□	●	●
Formalized Articulation and Communication	Family/Parental Involvement and Support	●	□	□	●	●	●	⊗	⊗
	Early Notification of Vocational Opportunities	□	□	□	□	●	⊗	●	⊗
	Voc. & Regular Educators Involvement in Planning	⊗	□	□	⊗	⊗	□	●	●
	Formalized Transition Planning	□	□	⊗	⊗	●	□	⊗	●
	Intra- and Interagency Collaboration	□	●	●	⊗	●	●	⊗	●
Occupational Experience, Placement, and Follow-Up	Work Experience Opportunities	□	□	□	□	□	□	⊗	⊗
	Job Placement Service	□	□	⊗	□	□	□	□	⊗
	Follow-Up	⊗	●	●	⊗	□	●	□	●

● Mandated* ⊗ Encouraged** □ Not Discussed***

Coding:

* ● Mandated — The component is mandated within the legislation.

** ⊗ Encouraged — The component is allowable or encouraged within the legislation.

*** □ Not Discussed — The component is not discussed within the legislation.

Professional Textbooks

Over the past decade the field of vocational special needs education has begun to develop a discrete knowledge base which is shared by the rapidly growing group of professionals who work in the field. Since the early 1980s, several professional texts have been published for use in teacher education programs and inservice workshops. Written primarily by individuals with backgrounds in special education, these texts offer useful ideas on how to modify or develop vocational education programs which are more responsive to students with disabilities and other learning and behavioral problems.

Nine recently published textbooks on vocational education for students with special needs were also identified and collected. The content of these sources were analyzed, comparing and contrasting the chapter and section headings with the components identified within the emergent preliminary framework. Figure 4 represents an analysis of the chapter and section headings from these textbooks. Three of these texts were second editions, which confirms the growing professional acknowledgment of this area of specialization.

All of the texts reviewed clearly support the components found in the Comprehensive Support Services category. While these texts come from distinctly different professional orientations and biases, there is unanimous agreement on the importance of Comprehensive Support Services as a category, and intra- and interagency collaboration and individualized curriculum modifications as components. These texts also emphasize the importance of job placement, worksite training, transitional services, and follow-up studies to ensure continuing employment and independence. Since work-based experiential programs have long been popular in rehabilitation and special education, this finding is not surprising.

Interestingly, the texts do not provide uniformly strong support for some of the components in the Curriculum and Instruction category. Professional journals have only recently addressed cooperative learning and the integration of academics into vocational curricula, but these components have not yet received attention in the texts. Overall, the texts place a focus on specialized, separate work- and community-based instructional settings as contrasted with integrated, school-based instructional settings. However, the attention given to components that are integral to integrated settings (e.g., cooperative learning) is more prominent in the texts published most recently.

Figure 4. Textbook Chapter and Section Headings

	Components \ Textbook Chapter/ Section Headings	Berkell and Brown, 1989	Gaylord-Ross, 1988	Gillet, 1981	Kokaska and Brolin, 1985	Meers, 1987	Rusch, 1986	Rusch et al., 1992	Sarkees and Scott, 1985	Welsgerber, 1981
Program Administration	Administrative Leadership/Support	●	□	□	⊗	●	⊗	□	□	●
	Sufficient Financial Support	●	●	⊗	□	⊗	●	□	⊗	●
	Formative Planning Evaluation	⊗	⊗	●	□	□	●	⊗	⊗	⊗
	Summative Planning Evaluation	⊗	⊗	●	□	□	●	⊗	⊗	□
	Staff Development	□	□	□	⊗	⊗	⊗	⊗	⊗	⊗
Curriculum and Instruction	Individualized Curriculum Modifications	●	●	●	●	●	●	●	●	●
	Integration of Vocational and Academic Curricula	□	□	□	□	□	□	⊗	⊗	□
	Appropriate Instructional Settings	□	□	□	□	□	●	●	●	●
	Cooperative Learning Experiences	□	□	□	□	⊗	□	⊗	□	□
Comprehensive Support Services	Ongoing Career Guidance and Counseling	●	●	●	●	●	●	●	●	●
	Instructional Support Services	●	●	●	●	●	●	●	●	●
	Assessment of Individuals' Interests and Abilities	●	●	●	●	●	●	●	●	●
Formalized Articulation and Communication	Family/Parental Involvement and Support	□	□	□	●	□	●	●	□	□
	Early Notification of Vocational Opportunities	□	□	□	⊗	⊗	⊗	⊗	□	□
	Voc. & Regular Educators Involvement In Planning	□	●	⊗	⊗	●	⊗	⊗	⊗	□
	Formalized Transition Planning	●	⊗	□	⊗	●	●	●	●	□
	Intra- and Interagency Collaboration	●	●	●	●	●	●	●	●	●
Occupational Experience, Placement, and Follow-Up	Work Experience Opportunities	⊗	⊗	⊗	⊗	●	⊗	⊗	⊗	⊗
	Job Placement Service	●	⊗	⊗	●	●	●	⊗	●	⊗
	Follow-Up	●	⊗	●	⊗	●	●	⊗	●	⊗

Coding:

● **Chapter heading within textbook reviewed.**

⊗ **Section heading within textbook reviewed.**

□ **Component not addressed within textbook reviewed.**

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SUMMARY, CONCLUSIONS, AND DISCUSSION

This study focused on the development and preliminary validation of a framework for effective vocational education programs serving students with special needs. An initial framework composed of twenty program components was posited from an analysis of recent, rigorous studies of vocational education programs serving disabled, disadvantaged, and LEP students. Each of the studies examined programs which had produced quantifiable student outcome evidence (e.g., student achievement and job placement). Based on the analysis of these studies, a composite list of twenty components was constructed and its content validity scrutinized using three additional analyses. Information for the concurrent validity analyses was drawn from state-sponsored studies of exemplary programs, a series of current professional texts, and current federal legislation. Collectively, these information sources represent the contemporary professional knowledge base for much of what is found in current policy and practice.

Content analysis matrices were developed for each of the information sources. For each of the documents or studies, a data matrix illustrated the extent to which each of the twenty components of the initial framework was verified by the source documents. Multiple readers with expertise in vocational education for special needs students reviewed and verified the data presented in the matrices.

Conclusions

The results of this preliminary concurrent validation study suggest that, overall, the framework has broad utility based on the information sources used herein to verify and refine its content. There is substantial support in empirical and conceptual literature as well as in federal policy documents for each of the components. Each of the twenty components draws support from at least half of the validity sources.

Eight components appear to have particularly strong concurrent validity. More than half of the source documents verified as essential (i.e., explicitly verified) the following components:

1. Sufficient Financial Support
2. Individualized Curriculum Modifications

3. Ongoing Career Guidance and Counseling
4. Instructional Support Services
5. Assessment of Individual Career Interests and Abilities
6. Family/Parental Involvement and Support
7. Intra- and Interagency Collaboration
8. Follow-Up (graduates and nongraduates)

These components clearly emerge as the core structure for the programs and services that serve special population students effectively. Policymakers, local administrators, and other professionals should seek to develop and refine these particular components through both policy development and local program implementation. Further applied research and rigorous program evaluations are needed to examine the validity and criticality of the remaining components.

Since these eight components are spread across the five classification categories, one may also conclude that the categories of the framework possess verified, concurrent validity as well. The classification categories serve to link the components to other frameworks and taxonomies for educational programs and policies. Largely, the categories serve to place the components in clusters which can be readily understood by principals, teachers, and other educators who are not familiar with the specifics of vocational education programs serving special needs populations.

Further, the utility of this preliminary framework has been tested in three rounds of the NCRVE's National Recognition Program of Exemplary Vocational Special Needs Programs. Annually, NCRVE searches to identify and document programs serving various special population groups. Over the course of three competitions, the framework has been used by local directors making application for the recognition program as well as by panels of experts who judge the completed applications. Following each competition, the staff and the expert panels have reviewed the framework and considered revisions. Throughout the competition, the components and their descriptions remained unchanged.

Discussion

This framework needs further attention in the context of the rapid restructuring that is occurring in the nation's educational institutions and workplaces. A variety of studies are needed to examine the usefulness of the framework in light of school restructuring trends and the growing diversity of students entering schools who eventually will comprise the nation's workplace.

The present study did not seek to test the framework against the components of effective schools or effective instruction for all students. As various state and national reform efforts affecting special population students (such as the Regular Education Initiative or full inclusion approaches) are considered, it is essential that this knowledge base be examined and the framework modified accordingly. Two of the components in the framework (cooperative learning experiences and integration of vocational and academic curricula) are often cited in the general education reform literature (Center on Organization and Restructuring of Schools, 1992), but only limited verification data could be found in the vocational special needs literature and policy to support their inclusion.

As vocational-technical education curricula are revamped to reflect the move toward high skill, high wage occupations and high performance work organizations, the importance of certain components for special population students is likely to change. For instance, the inclusion of higher levels of problem solving in vocational curriculums will likely require more extensive instructional modifications (e.g., teaching different problem-solving approaches and more intensive remedial instruction). To remain viable, program and policy frameworks such as the one presented here will have to be re-examined closely as student outcomes and instructional objectives change to reflect new workplace demands and technology applications.

As suggested by much of the demographic literature, the population of students coming to schools is increasingly diverse (Haffner, Ingels, Schneider, & Stevenson, 1990). This trend is significant along two dimensions. The expanded pluralism of the school-age population brings a new social milieu to the classroom which is unfamiliar to many teachers and, in some cases, many of the students as well. Further, the increased severity and complexity of learning, family, and economic difficulties faced by these students present major challenges for the educational system. It should be noted that many

of the studies upon which the framework is based examined "mainstreamed" programs which tend to serve those students with mild disabling and academic difficulties. Future research and development efforts should focus on extending the validity of the framework for programs which serve severely disabled students and those with multiple educational disadvantages (e.g., pregnant and parenting teens who also have language barriers and learning disabilities).

Finally, the unevenness of the findings across the four matrices suggests that research, policy, and practice should be more intimately connected. There were dramatically different patterns of support for the components among the four matrices. Future state and federal legislation and policymaking should draw more heavily on applied research and evaluation studies. Texts prepared for current and future educators should reflect more carefully the tested and recommended practices which emerge from applied research studies and evaluation rather than passing along the conventional wisdom gleaned from a small number of specific programs or communities.

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APPENDIX

Components of Effective Vocational Education Programs Serving Special Populations

Program Administration

1. *Administrative Leadership and Support*

   Both institution and program administrators act in ways that reflect concerns for enrollment, completion, and appropriate placement for special needs students within the overall mission of the vocational-technical education programs.

2. *Sufficient Financial Support*

   Average per student expenditures for special needs students exceed the expenditures for nonspecial needs students at the institutional level. When comparing expenditures for special needs students, the additional costs of modified instruction, special equipment, staff development, and other essential services are evident. Special needs students at the postsecondary level have access to appropriate financial aid through Pell Grants, vocational rehabilitation, and other programs.

3. *Formative Program Evaluation*

   Procedures for evaluating the performance of the program are clearly specified. Special needs students, parents, and employers have opportunities to assess the quality of programs and services.

4. *Summative Program Evaluation*

   Regular assessments are made of students and program outcomes, including completion rates, program-related placement, earnings, and program compliance with accreditation standards.

5. *Staff Development*

   Provisions exist for a variety of individual and department-level professional development programs. These provisions assure that staff have up-to-date knowledge regarding learning styles, business and industry standards, and effective techniques for teaching and counseling special students.

Curriculum and Instruction

6. *Individualized Curriculum Modifications*

   Instruction is planned and delivered utilizing principles associated with individual education plans. Instructional activities are matched on an individual or overall group basis to students' learning styles.

7. *Integration of Vocational and Academic Curricula*

   Potential integration indicators include team teaching, use of applied academics courses/modules in technical courses, and the development of new occupational courses emphasizing general and basic skills.

8. *Appropriate Instructional Settings*

   Students are assessed and placed in vocational-technical programs based on their individual needs, backgrounds, abilities, and interests. To the extent appropriate students are served in regular, mainstream programs.

9. *Cooperative Learning Experiences*

   Students have opportunities to participate in structured, small group learning situations in classrooms, labs, and/or workplaces.

10. *Ongoing Career Guidance and Counseling*

    Career guidance services are provided to students and, where appropriate, parents, including career and educational planning, labor market information, and employability skills (e.g., job seeking strategies).

Comprehensive Support Services

11. *Instructional Support Services (e.g., aides and resources)*

    A variety of instructional support services are utilized, including teachers' aides, special materials, assistive technology, interpreters, and peer tutors.

12. *Assessment of Individual Career Interests and Abilities*

    Comprehensive approaches are used to assess students' career interests, aptitudes, and abilities. Teacher-developed and commercially purchased assessment forms and materials are used.

Formalized Articulation and Communication

13. *Family/Parental Involvement and Support*

Parents are involved in general program planning and development through advisory committees and task forces. Parents are also directly involved in planning and evaluating the progress of a career-related instruction provided for their son/daughter.

14. *Early Notification of Vocational Opportunities (Both Students and Parents)*

Program staff inform potential special population students and their parents of vocational and educational options available through the program on a systematic basis. This information also includes notification of the support services available.

15. *Vocational and Regular Educators' Involvement in Individualized Planning*

Vocational and regular educators are involved in the individualized planning process used by the program. Indicators of this involvement include consultation regarding appropriate goals and objectives for students and frequent communication between vocational and special educators regarding modifications to instruction, student performance/achievement, and needed support services.

16. *Formalized Transition Planning*

Program participants are provided with formalized transition planning. Transition is defined as the movement of a special population student from one level or program to another (e.g., from secondary school setting to postsecondary vocational education program, a community-based rehabilitation program, and/or work). Indicators of transition planning include consultation with vocational rehabilitation and other nonschool agencies, frequent contact with representatives of the educational settings to which students will move, consideration of the full range of options for further education or work, and involvement of parents and significant others in the plan development.

17. *Intra- and Interagency Collaboration*

Effective intraagency cooperative arrangements include indication of the departments and programs within the educational institution which provide support services, resources, and general assistance to either the special population students or the staff of the vocational special needs program; the coordination activities

conducted; and the benefits of this collaboration. Interagency cooperative arrangements that are effective specify the external agencies and organizations (the contact personnel) which provide assistance to program staff and/or participants; detail the services and resources provided; and outline the benefits of these collaborative efforts.

Occupational Experience, Placement, and Follow-Up

18. *Work Experience Opportunities*

Opportunities to gain supervised work experience are available to program participants during their enrollment in the program. Employment and work assignments are coordinated directly with instructional and career exploration goals for individual students.

19. *Job Placement Services*

Special population students have available job placement services which include alternative methods to identify available jobs (including full-time, part-time, and summer jobs) and the procedures to assist students in acquiring related employment during or following program completion.

20 *Follow-Up (graduates and nongraduates)*

Program staff regularly collect follow-up information to describe the postprogram performance of students. The information is used to improve the program and services.